UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/516,284	03/01/2000	Brett A. Bernath	00CXT0330D	3468

20594 7590 11/10/2003	EXAMINER	
CHRISTOPHER J. ROURK	SHANG, ANNAN Q	
AKIN, GUMP, STRAUSS, HAUER & FELD, L.L.P.	ART UNIT	PAPER NUMBER
P O BOX 688	2614	7
DALLAS, TX 75313-0688		

DATE MAILED: 11/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 August 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-6 and 11-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-6 and 11-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage
application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892) 4)☐ Interview Summary (PTO-413) Paper No(s). _____ .

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5)☐ Notice of Informal Patent Application (PTO-152)

3)☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ . 6)☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2.   Claims 18-23 are rejected under 35 U.S.C. 102(b) as being anticipated by

Johnston et al (5,414,707).

As to claim 18, note the **Johnston et al** reference figure 3, disclose broadband

ISDN processing method and system and further disclose a system for receiving data

comprising the following; the claimed "a programmable pattern matching engine

receiving a pattern and a data stream..." is met by Machine (M-20) 20 (figure 3 and col.

5, lines 29-66), note that M-20 is a programmable machine and interfaces to a variety of

service equipments including video, audio and data, and receives a pattern and data

stream and generates an index entry if the pattern is present in the data stream; the

claimed "a microprocessor reading the index entry..." is met by Microinstruction Unit 28

(MicU-28), note that M-20 is controlled through SRAM 22 which is loaded through an

external Microprocessor 24 and MicU-28 receives instructions or reads the index entry

and determines whether to continue receipt of the data stream and enables M-20 to

provide formatted data (col. 5, lines 38-48); and CRC machine 38 performs CRC

processing of a received data frame if MicU-28 determines to continue receipt of the data stream (col. 5, line 56-col. 6, line 40).

As to claims 19 and 20, Johnston further discloses one or more of a IP address and protocol identifier (PID) of an MPEG frame (col. 3, line 61-col. 4, line 22) and further M-20 performs address filtering and PID filtering (col. 5, lines 34-66).

As to claim 21, Johnston further discloses ATM/SONET interface 26 coupled to the Microprocessor 24, M-20 and CRC machine 38 to facilitate movement of data between M-24, M-20 and CRC 38 (figure 3 and col. 5, line 34-66).

As to claim 22, Johnston further discloses where M-24 comprises a programmable media access controller (col. 3, lines 40-42), note that the interface can be used for multimedia terminals.

As to claim 23, Johnston further discloses where the CRC machine 38, performs CRC processing of a received data frame if MicU-28 determines to continue receipt of data stream (col. 5, lines 56-66 and col. 6, lines 25-41).

Claim Rejections - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   Claims 1, 2, 4-6, 11-17, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Sherer et al (6,434,165)** in view of **Johnston et al (5,414,707).**

As to claim 1, note the **Sherer et al** reference figures 4 and 6, disclose a

communication network system that transmits and receives communication frames that

include a transmission status section that indicates a communication frame

transmission is aborted where cyclical redundancy check (CRC) value is created based

upon the information within the a communication frame and further disclose a cable

modem comprising the following: the claimed "a first interface for receiving data..." is

met by Receiver 421 or Cable Modem 641 and 642, note figures 4, 6 and col. 7, lines

23-35 and col. 9, lines 34-67, note that Receiver 421 of the Subscriber Equipment 420

receives data from Hub 410, note that figure 4 is also implemented in figure 6, as Head

end 610 that transmits/receives data to Cable Modem 641 and 642, via cable 620, the

claimed "pattern matching engine..." is met by CRC Checker 423, note col. 7, line 36-

col. 8, line 8, note that CRC checker 423 evaluates patterns (the length or number of

bits in the received fames) in the data, by calculating the CRC value base upon the

received information at the first interface of the Cable, CM 641 and 642 or Subscriber

Equipment 420, compares it to the value transmitted with the frame, and enables the

determination of appropriate procedures for treatment of the data, note also that if the

CRC values match, CRC Checker 423 notifies MAC frame user 412 that the information

is valid and if the two values do not match, CRC Checker 423 notifies MAC frame user

412 that the information is valid and enables the MAC frame to perform its designated

tasks, i.e. discarding or filtering the information and CM is presented with only those

frames, length in bits, bytes, etc., that requires processing (col. 6, lines 11-48).

Sherer fails to explicitly teach programmable pattern matching engine that may be programmed according to patterns that are desired to be matched during various operations of the cable modem.

However, note **Johnston** discloses broadband ISDN processing method and system and further disclose CRC machine 38 that receives instructions from Microinstruction Unit 28, and could be dedicated or programmable so that a variety of CRC polynomials can be programmed according to patterns that are desired (figure 3, col. 5, lines 56-65 and col. 6, lines 25-41)

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Johnston into the system of Sherer in order to provide a programmable CRC machine, that dynamically changes to accommodate different applications or plurality of CRCS'.

As to claim 2, Sherer further discloses where the pattern matching engine is configured to match addresses segments of data that is received at the first interface of the Cable Modem 641 or 642, note col. 9, line 47-col. 10, line 3, note that the information received at the cable modem contains also MAC address and IP address of the various devices connected to the cable modem.

As to claim 4, Sherer further discloses where CRC Checker 423 determines whether to accept a frame at the cable quicker than if the cable modem were required to wait on processing at a central microprocessor, inherent to SE 420 or Cable Modem 641 or 642, note col. 6, lines 10-29.

As to claims 5 and 6, Sherer fails to explicitly teach matching frame portions.

However Johnston teaches CRC machine that that enables pattern matching of various frame portions (col. 6, lines 10-41).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Johnston into the system of Sherer to provide a CRC machine that process portions of data fast decision making by the microprocessor.

As to claim 15, Sherer further discloses a CM comprises patterns of MAC address, IP address, and a protocol identifier (PID) of MPEG frames (col. 7, lines 36-67 and col. 9, line 54-col. 10, line 22).

As to claim 16, Sherer further discloses a CM where the operations of the CM comprise one or more link control filtering, protocol identifier filtering, etc., (col. 10, lines 18-57).

As to claim 17, Sherer fails to explicitly teach CRC Checker 423 performing CRC processing of a received data frame after a microprocessor receives data from the CRC 423 and determines to accept a received frame based on the data received from the CRC 423. However, this limitation is previously discussed with respect to claim 23.

As to claim 11, note the **Sherer et al** reference figures 4 and 6, disclose a communication network system that transmits and receives communication frames that include a transmission status section that indicates a communication frame transmission is aborted where cyclical redundancy check (CRC) value is created based upon the information within the a communication frame and further disclose a method for a communication device to compare a predetermined pattern to a pattern that

corresponds to a portion of a data frame. The claimed method comprising... is met as

follows; the claimed "determining acceptable parameters for the data frames..." is met

by Receiver 421 or Cable Modem 641 and 642, note figures 4, 6 and col. 7, lines 23-35

and col. 9, lines 34-67, note that Receiver 421 of the Subscriber Equipment 420,

determines acceptable parameters for data frames that are to be received at Subscriber

Equipment 420, note that figure 4 is also implemented in figure 6, as Head end 610 that

transmits data to Cable Modem 641 and 642, via cable 620; Receiver 421 further

receives data and CRC Checker 423, parses the data to obtain a predetermined portion

of the data, note col. 7, line 36-col. 8, line 8, note that CRC checker 423, calculates

CRC value base upon the received information at the first interface of the Cable and

further both SE 420/CM 641 and Hud 410/Headend 610 encapsulates data in the data

communications frames, note also that if the CRC values match, CRC Checker 423

notifies MAC frame user 412 that the information is valid and if the two values do not

match, CRC Checker 423 notifies MAC frame user 412 that the information is valid and

enables the MAC frame to perform its designated tasks and discard or disregard the

information

Sherer, fails to explicitly teach programming the acceptable parameters into CRC

Checker 423 in Receiver 421 and comparing the predetermined portion of the data with

the acceptable parameters stored in the CRC Checker 423.

However, note **Johnston** discloses broadband ISDN processing method and

system and further disclose CRC machine 38 that receives instructions from

Microinstruction Unit 28, and could be dedicated or programmable so that a variety of

CRC polynomials can be programmed according to patterns that are desired (figure 3, col. 5, lines 56-65 and col. 6, lines 25-41) and further teaches a Register Pads 34 that stores and reads comparison functions which are used for fast decision making by the microinstruction unit 28 (col. 6, line 56-col. 6, line 41) and further compares predetermined portion of the data.

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teaching of Johnston into the system of Sherer in order to provide a programmable CRC machine to dynamically change to accommodate different applications or plurality of CRCS' and a register that is accessible by the microprocessor for fast decision making.

Claims 12 and 13 are met as previously discussed with respect to claim 11.

Claim 14 is met as previously discussed with respect to claim 2.

Claim 24 is met as previously discussed with respect to claim 19.

Claim 25 is met as previously discussed with respect to claim 20.

Response to Arguments

5.   Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection discussed above. Amendments to the claims necessitated new ground(s) of rejection. This Office Action is made FINAL.

Conclusion

6.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dubey et al (6,560,742) disclose parallel system and method for CRC generation (col. 5, line 55-col. 6, line 1+).

Honig et al (6,542,470) disclose packet expansion with preservation of original CRC code check indication (col. 3, line 63-col. 4, line 16 and line 60-col. 5, line 22).

Malakapalli et al (6,467,060) disclose generating master CRC from a plurality of CRCs (figures 10, 13, col. 14, lines 5-65 and col. 15, lines 28+).

Zook (5,724,368) discloses CRC method and apparatus (col. 2, lines 35-63 and col. 10, lines 35-51).

Seconi et al (5,638,370) disclose status bit controlled HDLC accelerator (col. 3, lines 23-35 and col. 5, lines 9-25).

7.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Annan Q Shang** whose telephone number is **703-305-2156**. The examiner can normally be reached on **700am-500pm**.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **John W Miller** can be reached on **703-305-4795**. The fax phone number for the organization where this application or proceeding is assigned is **(703) 872-9306**.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the **Customer Service** whose telephone number is **703-306-0377**.

Annan Q. Shang

JOHN MILLER
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600